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The Effect of Using PowerPoint on Iranian EFL Learners' Knowledge of Abstract Vocabulary

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Abstract

The present study investigated the effect of using PowerPoint on Iranian EFL intermediate and advanced learners' knowledge of abstract vocabulary. To this end, two experimental and two control groups (n=120): the experimental group using PowerPoint and the control group using traditional methods of instructions took part in this study. A pre-test and a post-test of vocabulary were administered to all groups. The data were analyzed using t-tests and one-way ANOVA. The results revealed that the learners in the experimental groups received higher scores in vocabulary test and using PowerPoint had a greater effect on intermediate learners' vocabulary knowledge.

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Keywords: Abstract vocabulary; PowerPoint; EFL

1. Introduction

In learning a language, one of the most challenging aspects is having inadequate vocabulary for communicating in the target language. In fact, vocabulary is generally considered as the basic communication tool. Thornburry (2002, p: 13) stated, "if you spend most of your time studying grammar, your English will not improve very much. You will see most improvement if you learn more words and expressions. You can say very little with grammar, but you can say almost anything with words.". According to Nunan (1991), teaching vocabulary, especially abstract vocabulary has always aroused less interest and it can be due to the fact that most teachers do not know how to teach it effectively. Nowadays, the researchers' focus is on how vocabulary is taught and what the most efficient means for increasing effective acquisition are. On the other hand, Brown (1994) asserts that the recent advances in

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educational applications of computer hardware and software have provided a rapidly growing resource for language classrooms. The practical applications of computer assisted language learning are growing at such a rapid pace that it is almost impossible for a classroom teacher to keep up with the field.

According to Heltai (1996, p. 71) “it is argued that the learning of abstract vocabulary is more difficult in that such item is rather difficult to associate with a visual image”, cannot be explained through visual aids, body gestures, or games. It is suggested that, using modern techniques like power point which can visualize abstract vocabulary is a useful method that can be used by the teachers.

2. Research questions and hypotheses

This study aimed to answer the following research questions:

- Does using PowerPoint affect Iranian EFL intermediate learners’ knowledge of abstract vocabulary?
- Does using PowerPoint affect Iranian EFL advanced learners’ knowledge of abstract vocabulary?
- Does using PowerPoint have the same effect on intermediate and advanced learners’ knowledge of abstract vocabulary?

Along the same line, the following null hypotheses are formulated:

- Using PowerPoint does not affect Iranian EFL intermediate learners’ knowledge of abstract vocabulary.
- Using PowerPoint does not affect Iranian EFL advanced learners’ knowledge of abstract vocabulary.
- Using PowerPoint does not have the same effect on intermediate and advanced learners’ knowledge of abstract vocabulary.

3. Methodology

3.1. Participants

To accomplish the objectives of the study, 120 participants (males and females) out of 126 Iranian EFL learners from a private language institute in Khoy, Iran, were invited to take part in this study. 120 participants, 60 from intermediate and 60 from advanced level, were selected based on the results of an OPT administered. Six of the participants got low scores in comparison to others and consequently, they were excluded from the study. Worth mentioning that the OPT was administered to the intermediate and advanced proficiency learners separately. Then, they were divided randomly into two groups (one experimental and one control) in the intermediate level and two groups (one experimental and one control) in the advanced level.

3.2. Materials

Four instruments were used in this study: 1) proficiency test, 2) a pre-test, 3) microsoft PowerPoint software, and 4) a post- test. To guarantee participants' homogeneity in terms of their language proficiency, the Oxford Placement Test (OPT) version 1 was employed. For each section, the participants were asked to answer the questions in the specified answer sheet. The answers were then collected and scored by the researcher. The OPT that was used in this study was scored on the basis of the standard criteria introduced by the test itself.

A vocabulary test as the pre-test, including twenty multiple-choice items of four alternatives was administered to all participants to measure their prior knowledge of the target words. At the beginning of the test paper, the instructions of the test were introduced. The subjects were asked to choose the correct answer. The KR-21 reliability of the intermediate level's pre-test was found to be 0.81 and the same score for the advanced level was 0.67. The score of the test ranged from 0 to 20, with each item receiving one mark for the correct answer. Another vocabulary test with the same characteristics of pre-test was designed as the post-test. It is worth to note that advanced level participants' pre and post tests were designed according to their level of proficiency.

The last material used in this project was PowerPoint software. Fifty PowerPoint slides for the vocabularies of intermediate group and fifty PowerPoint slides for the vocabularies of advanced group were used. In order to help learners to guess the meaning of a word through using PowerPoint, on each slide there was a picture that represents the meaning of the word.

3.3. Procedure

Since this study examined the effect of PowerPoint on the vocabulary learning of learners at two distinct levels of proficiency, one experimental and one control group in each level, the procedures used for the purpose of this study were the same for all four groups. The participants of this study were given an OPT test to determine their proficiency level and 120 students were selected for the study. Then a pre-test was administered to assess their vocabulary knowledge. Program was a ten-session course, each session lasting for 30 minutes. Five unknown abstract vocabularies were taught each session. The syllabus was the same for two groups (experimental and control groups) except that the new vocabularies in the experimental group were taught with the help of using PowerPoint slides while the control group learners didn't receive PowerPoint assisted vocabulary teaching. In the experimental group, to make abstract vocabularies more tangible, any word was displayed with its related picture on one slide of PowerPoint. It was tried to choose the pictures that best described unknown words. They helped students to guess the meaning of the words without receiving any aid from the teacher. In the control group, unlike the experimental group, the words were taught through common methods of teaching vocabulary such as: explaining the meaning of the words in English and presenting Persian translation for the words. At the end of the course, to see the effectiveness of instructions in both groups, a vocabulary test was given to both groups as post-test. It is necessary to explain that the same procedure was followed for both experimental-control groups of advanced level participants. The scores obtained by the pre-test and post-test were statistically analyzed.

3.4. Data Analysis

The elicited data was analyzed using the SPSS. In order to understand whether PowerPoint application was more effective than traditional teaching, that is, to answer questions 1 and 2, a one way ANOVA and post-hoc Dunnett C tests were utilized. To answer the last question, a separate independent samples T-test was used.

4. Results

4.1. Intermediate Level

In Table 1, the descriptive statistics of the pre-test (PR) and post-test (PO) of both control (CG) and experimental (EG) groups were computed.

Table 1. Descriptive analysis of the PR and PO tests of the control and experimental groups

	N	Mean	Std. Deviation	Std. Error
PR CG	30	8.8117	2.94536	.53775
PO CG	30	8.8167	3.05829	.55837
PR EG	30	8.5417	2.43190	.44400
PO EG	30	16.3750	1.29280	.23603
Total	120	10.6363	4.16227	.37996

In order to examine the homogeneity of variance, i.e., the assumption that the variance within each of the groups is equal, Levene's test was used to test the null hypothesis of two groups' have equal variation.

Table 2. Levene's homogeneity of variances test for the control and experimental groups

Levene Statistic	df1	df2	Sig.
10.091	3	116	.37

Table 2 represents the results of Levene's test for equality of variances. Since the significance value is 0.37 which is greater than 0.05, so this assumption is not violated.

Table 3. Results of one-way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1318.816	3	439.605	68.651	.000
Within Groups	742.799	116	6.403		
Total	2061.615	119			

To test differences among means of groups in the intermediate level, a one-way ANOVA (Analysis Of Variance) test was used. According to the results of analysis of variance test in Table 3, F-value ($F = 68.651$) is significant ($p = 0.000 < 0.05$). It means that there is a significant difference between the means of pre and post tests scores of the control and experimental groups.

Table 4. Multiple comparisons for PR and PO tests of control and experimental groups

(I) Test	(J) Test	Mean Difference (I-J)	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
PR test	PO test EG	-.756333 *	.58727	-9.1633	-5.9633
	CG	-.00500	.77520	-2.1171	2.1071
	PR test EG	.27000	.69736	-1.6300	2.1700
	CG	7.56333 *	.58727	5.9633	9.1633
PO test	EG	7.55833 *	.60620	5.9067	9.2099
	CG	7.83333 *	.50284	6.4633	9.2033
	PR test EG	.00500	.77520	-2.1071	2.1171
	CG	-.00500	.77520	-2.1071	2.1171
PO test	CG	-.755833 *	.60620	-9.2099	-5.9067
	EG	.27500	.71338	-1.6686	2.2186
	PR test EG	-.27000	.69736	-2.1700	1.6300
	CG	-7.83333 *	.50284	-9.2033	-6.4633
PR test	EG	-.27500	.71338	-2.2186	1.6686
	CG	-.27500	.71338	-2.2186	1.6686

* The mean difference is significant at the 0.05 level.

Since Table 3 does not exactly reveal where the differences among the groups occur, post-hoc Dunnett C test is presented to reveal the location of differences (see Table 4). As it is obvious in the above table, the asterisks are demonstrative of a significant difference between the two groups being compared. The mean difference for the groups is compared at $p < .05$. According to the table, the mean difference between pre-test and post-test of

experimental group is significant. It demonstrates the positive effect of using PowerPoint on learning abstract vocabulary.

4.2. Advanced Level

In Table 5, the data is presented in descriptive statistics through means, standard deviation and standard error for each group of advanced level.

Table 5. Descriptive analysis of the PR and PO tests of the control and experimental groups

	N	Mean	Std. Deviation	Std. Error
PR CG	30	15.5333	2.74862	.50183
PO CG	30	15.4167	2.51061	.45837
PR EG	30	15.3917	2.34675	.42846
PO EG	30	19.4667	.68145	.12441
Total	120	16.4521	2.80892	.25642

To check the homogeneity of variances, the significance value is checked and since it is 0.47 which is greater than 0.05, the assumption is not violated (Table 6).

Table 6. Levene's homogeneity of variances test for the control and experimental groups

Levene Statistic	df1	df2	Sig.
12.119	3	116	.47

According to Table 7, since F-value ($F = 24.465$) is significant ($p = 0.000 < 0.05$), it is concluded that there is significant difference between the mean scores of the four groups. However, this table does not show where the difference is.

Table 7. Results of one-way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	363.852	3	121.284	24.465	.000
Within Groups	575.060	116	4.957		
Total	938.912	119			

Post-hoc comparisons using the Dunnett C test (Table 8) indicated that the mean difference between pre-test and post-test of experimental group is significant.

In conclusion, it can be stated that the integration of PowerPoint software had significant effect on Iranian advanced EFL learners' knowledge of abstract vocabulary.

Table 8. Multiple comparisons for PR and PO tests of control and experimental groups

(I) TEST	(J) TEST	Mean	Std. Error	95% Confidence Interval	
		Difference (I-J)		Lower Bound	Upper Bound
PR test CG	PO test EG	-3.93333 [*]	.51702	-5.3420	-2.5247
	PO test CG	.11667	.67966	-1.7351	1.9684
	PR test EG	.14167	.65985	-1.6561	1.9394
	PR test CG	3.93333 [*]	.51702	2.5247	5.3420
PO test EG	PO test CG	4.05000 [*]	.47496	2.7560	5.3440
	PR test EG	4.07500 [*]	.44615	2.8594	5.2906
	PR test CG	-.11667	.67966	-1.9684	1.7351
PO test CG	PO test EG	-4.05000 [*]	.47496	-5.3440	-2.7560
	PR test EG	.02500	.62744	-1.6845	1.7345
PR test EG	PR test CG	-.14167	.65985	-1.9394	1.6561
	PO test EG	-4.07500 [*]	.44615	-5.2906	-2.8594
	PO test CG	-.02500	.62744	-1.7345	1.6845

4.3.

Experimental groups' performances of the intermediate and advanced levels

In response to the third research question that investigates whether using PowerPoint have the same effect on intermediate and advanced learners' knowledge of abstract vocabulary, an independent T-test was conducted. Table 9 indicates the means and standard deviations for the difference between pre-test and post-test scores of the experimental groups.

Table 9. Descriptive statistics for the difference between PR and PO tests scores of the experimental groups

	Test	Mean	Std. Deviation	Std. Error Mean
Intermediate	PR/PO EG	1.1583	.70247	.12825
Advanced	PR/PO EG	.7667	.76263	.13924

The results of independent samples T-test, as illustrated in Table 10 , shows that since the p-value (significance value) is smaller than 0.05, ($0.043 < 0.05$), t value ($t = 2.069$) is significant. And it can be concluded that using PowerPoint had more positive effect on intermediate proficiency learners' knowledge of abstract vocabulary than advanced ones.

Table 10. Independent samples t-test for comparing PR and PO tests scores difference of the experimental groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	.252	.617	2.069	58	.043	.39167	.18930	.01274	.77060
Equal variances not assumed			2.069	57.613	.043	.39167	.18930	.01268	.77065

5. Discussions

According to Iheanachu (1997), computer-assisted language learning (CALL) can be employed to improve the English vocabulary skills of students with limited English proficiency. CALL technology can also promote students' vocabulary acquisition and their autonomous abilities in learning. The integration of CALL in language learning classrooms makes a shift from teacher-centred to student-centred instruction.

The positive results which were found in this study are in line with Hoogeveen's (1995) claim on the effectiveness of using multimedia in language learning. In his study, several good points about using multimedia in language learning were found. Firstly, learners respond to multimedia in a complex way and give the feeling of experiencing information instead of simply acquiring it. Secondly, the man-machine is more friendly interaction. Thirdly, students feel more fun from multimedia and learning becomes a happy process. The findings of the present study also support the findings of Paivio (1971) study regarding memory research. He reviewed studies that compared memory for pictures to memory for words. The findings indicated that pictures are remembered better than either concrete words or abstract words. The verbal equivalent of a picture is probably not a single word but rather a story or description. Paivio (1971) also discussed studies that tested the effect of presenting a picture along with its verbal counterpart on word learning. Words were recalled better when the subject saw its accompanying picture.

6. Conclusion

The main purpose of this research was to investigate the impact of using PowerPoint on improving EFL learners' abstract vocabulary knowledge in both intermediate and advanced levels. The data revealed a number of positives; it indicated that the use of PowerPoint had a significant role on the improvement of EFL learners' abstract vocabulary knowledge.

Based on the findings of the present study and according to Radanov (2011), using PowerPoint software has several benefits for students. Its objective is acquisition of language in a funny and interactive way. It can help cooperative learning, so that the teacher does not simply provide students with information, but involves them in the learning-teaching process. It offers multimedia possibilities like sounds, images, colour, action, design, i.e., different learning styles: visual, auditory, kinaesthetic, creative, which, at the same time, means that it is attractive to various learning types.

The results of the study, further, revealed that those who had learned the words through PowerPoint software had better values of mean in the post-test in comparison with those who had learned the words through traditional vocabulary teaching techniques. It indicates that in using PowerPoint, learners have an intensive mental processing

which results in better acquisition of words.

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